

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6928

Petition of Green Mountain Power Corporation)
for a certificate of public good, pursuant to)
30 V.S.A. § 248(j), for Authority to Upgrade the)
Transformers at the Mallets Bay and Iroquois)
Substations in Colchester)

Order entered: 6/28/2004

I. INTRODUCTION

This case involves a petition filed by Green Mountain Power Corporation ("GMP") on February 9, 2004, requesting issuance of a certificate of public good ("CPG") by the Vermont Public Service Board ("Board") pursuant to 30 V.S.A. § 248(j) for the proposed upgrade of the existing 10 MVA transformer at its Mallets Bay Substation #34 to a new 10/14 MVA transformer, and the replacement of the 5/7 MVA Iroquois Substation #81 transformer with the 10 MVA transformer removed from Mallets Bay Substation #34. On May 3, 2004, GMP filed amended prefiled testimony to reflect the fact that the new 10/14 MVA transformer proposed for installation at Mallets Bay will be a spare transformer taken from GMP's stock, and to address questions or concerns expressed by the Vermont Department of Public Service ("DPS" or "Department"). On May 18, 2004, the Board requested the following material from GMP: a site plan of each substation showing existing and proposed conditions; additional information regarding the undergrounding of exit feeds from the Iroquois Substation; and additional information regarding changes in structure height. On June 16, 2004, the Board received the information requested on May 18, 2004.

Notice of the filing in this docket was sent on March 30, 2004, to all parties specified in 30 V.S.A. § 248(a)(4)(C) and all other interested parties. The notice stated that any party wishing to submit comments as to whether the petition raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 needed to file their comments with the Board on or before May 3, 2004. In addition, notice was published in the *Burlington Free Press* on April 5 and April 12, 2004, stating that any party wishing to submit comments as to whether the petition

raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 needed to file comments with the Board on or before May 3, 2004.

On April 21, 2004, comments were received from the Vermont Agency of Natural Resources ("ANR"), which stated that the proposed project does not appear to raise any significant concerns for the ANR pursuant to 30 V.S.A. § 248(j), and that the ANR does not request a hearing.

On May 3, 2004, comments were received from the Department, which stated that the petition, as described in the amended prefiled testimony of GMP witness Dean Denis filed on May 3, does not appear to raise any significant issues with respect to the substantive criteria of 30 V.S.A. § 248. The Department also does not request a hearing.

The Board has reviewed the petition and accompanying documents and agrees that, pursuant to 30 V.S.A. § 248(j), a CPG should be issued without the notice and hearings otherwise required by 30 V.S.A. § 248.

II. FINDINGS

1. GMP proposes to install a new 10/14 MVA transformer for the Mallets Bay Substation. The existing Mallets Bay 10 MVA transformer will be installed at the Iroquois Substation allowing for the conversion of the Iroquois 81J1 and 81J2 feeders from 4.16 kV to 12.47 kV, to match those of Mallets Bay (the "Project"). Petition; Denis pf. at 1.

2. The Iroquois conversion along with the Mallets Bay transformer upgrade will provide the following major benefits:

- The Mallets Bay Substation is loop sourced and can sustain a single transmission source outage contingency; the Iroquois Substation cannot, since it is radially sourced, and would be very difficult to loop source due to right-of-way constraints in the area. This Project will increase the reliability to the customers served from the Iroquois Substation by allowing for feeder back-up from the Mallets Bay Substation.

- Decrease losses on the Iroquois feeders by converting them to a higher voltage.

- Allows for feeder backup on all feeders which will increase reliability even during daily work procedures.

- Relieves high loading on the Mallets Bay Substation #34 by transferring portions of load from the 34G2 feeder to the converted 81J1 and 81J2 feeders. (Redistribution of load among the three feeders). Denis pf. at 2.

3. At present the 34G2, 81J1 and 81J2 all have tie points that can be utilized for feeder backup if the Iroquois Substation is converted to higher voltage (from 4 kV to 12.47 kV). GMP would extend the coverage of the 81J1 and 81J2 circuits to permanently pick up selected portions of the 34G2 line. With this reconfiguration of existing circuits, full feeder backup of either feeder is achievable. Denis pf. at 2.

4. GMP has stated that the construction to complete the Project will comply with the latest National Electrical Safety Code Requirements in compliance with Board Rule 3.500. Denis pf. at 5.

5. Presently, the capacity of the Mallets Bay Substation is 10.5 MVA. In the summer of 2003, the peak reached 8.91 MVA. According to the Peak Summer Station Load Forecast, the substation will be at capacity in 2006. The 34G2 feeder is responsible for 62% of the total Mallets Bay peak load, or roughly 5.5 MVA in 2003. If the proposed reconfigurations of the 81J1 and 81J2 feeders take place, the peak load on the 34G2 feeder will be reduced to approximately 2.6 MVA, thus decreasing the Substation total load to 6.02 MVA. Denis pf. at 3.

6. GMP plans to replace and upgrade the transformer at Mallets Bay, with installation of the existing Mallets Bay transformer at Iroquois, rather than install a new transformer at Iroquois, because of the greater benefits which can be achieved at an approximately similar cost. Installing the new transformer at Mallets Bay and replacing the existing transformer at Iroquois with the existing Mallets Bay transformer not only allows for the necessary voltage conversion at Iroquois, it offers greater system flexibility and greater room for future growth at the Mallets Bay Substation. The larger transformer at Mallets Bay will provide added reliability for outage contingencies of the Iroquois Substation circuits. The Project will allow the two substations to back each other up. Currently, with the 4 kV configuration, feeder backup for Iroquois from the adjacent Mallets Bay 12 kV circuits cannot take place. To ensure the backup capability, the existing Mallets Bay Substation transformer needs to be replaced with one of higher capacity to carry the existing Mallets Bay circuit loads, plus the potential Iroquois load. An additional

benefit will be the opportunity to switch load for routine line and substation work on Iroquois feeders. Denis pf. at 3-4.

7. The primary problems which GMP's Project address relate to reliability, and conservation would not effectively address the problem. Denis pf. at 4; findings 2-5, above.

8. The cost of the Mallets Bay transformer upgrade and related improvements is approximately \$213,000 and includes new voltage regulators and improved oil containment. It will be accounted for as a capital expenditure. The cost to convert the Iroquois Substation from 4.16 kV to 12.47 kV is approximately \$230,000 and will be accounted for as a capital expenditure. The cost of the voltage conversion from 4.16 kV to 12.47 kV of the two distribution circuits out of the Iroquois Substation is approximately \$430,000 and is also a capital expenditure. Denis pf. at 4 and Attachment A.

9. GMP proposes to install improved oil spill containment for the new transformer at Mallets Bay and for the Iroquois transformer at the Iroquois Substation consisting of a concrete containment basin located directly under the transformers designed to hold the entire volume of oil from each transformer, as well as 300 cubic feet of precipitation. Other equipment improvements such as installation of three new voltage regulators and replacement of distribution circuit breakers will also be undertaken. The exit feeders from the Iroquois Substation will be undergrounded a distance of 153 feet to a roadside riser pole to gain additional horizontal separation clearances, and some basic structural components will be replaced to assure the continued integrity of the structures. Denis pf. at 4 and 5; Denis sup. pf. at 3.

10. GMP will install a spare transformer at Mallets Bay out of stock in order to meet the schedule for completing the Project.

Orderly Development of the Region

[30 V.S.A. § 248(b)(1)]

11. The Project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. Letter from the Town

of Colchester, dated January 23, 2004, and letter from the Chittenden County Regional Planning Commission, dated February 1, 2004.

Need for Present and Future Demand for Service

[30 V.S.A. § 248(b)(2)]

12. The Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost effective manner through conservation programs and measures and energy efficiency and load management measures. Findings 2-7 above.

System Stability and Reliability

[30 V.S.A. § 248(b)(3)]

13. The Project for the reasons discussed above will enhance, and will not adversely affect, system stability or reliability. Findings 2-6 above.

Economic Benefit to the State

[30 V.S.A. § 248(b)(4)]

14. By enhancing GMP's system stability and reliability, emergency restoration and load shifts for maintenance and construction, the Project will result in an economic benefit to the state and its residents. Findings 2-6 above.

**Aesthetics, Historic Sites, Air and Water Purity,
the Natural Environment and Public Health and Safety**

[30 V.S.A. § 248(b)(5)]

15. The Project as proposed will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment, and public health and safety. This finding is supported by Findings 1, 6, & 9 above, and findings 16 through 30 below, which are the criteria specified in 10 V.S.A. §§ 1424(a)(d) and 6086(a)(1)-(8)(a) and (9)(k).

Outstanding Resource Waters

[10 V.S.A. § 1424(a)(d)]

16. There are no watercourses in the vicinity of the Project that have been designated as outstanding resource waters. Denis pf. at 6.

Water and Air Pollution

[10 V.S.A. § 6086(a)(1)]

17. The Project will not produce any emissions or waste and, accordingly, will not result in undue water and air pollution. Denis pf. at 6. This finding is also supported by the specific findings under § 6086(a)(1)(A) through (G).

Headwaters

[10 V.S.A. § 6086(a)(1)(A)]

18. Based on its location at the existing substations, the Project will not have an undue adverse impact on any headwaters. Denis pf. at 6.

Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

19. Because the Project will not result in the production of any wastes, it will meet all applicable health and Environmental Conservation Department regulations for the disposal of wastes, and will not involve the injection of waste materials or any harmful or toxic substances into ground water or wells. Denis pf. at 6.

Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

20. The Project will not utilize water during or after construction, and, accordingly, the criteria specified in 10 V.S.A. § 6086(a)(1)(C) relating to water conservation is inapplicable. Denis pf. at 6.

Floodways, Streams, and Shorelines

[10 V.S.A. §§ 6086(a)(1)(D), (E) & (F)]

21. The Project is not located in a floodway, and no streams, waterways, or shorelines will be impacted. Denis pf. at 6. No streams are located within 100 feet of the proposed work. Denis sup. pf. at 2, lines 13-14.

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

22. The Project will not result in an undue adverse impact on wetlands. Denis pf. at 6. No wetlands are located within 100 feet of the proposed work. Denis sup. pf. at 2, lines 13-14.

Sufficiency of Water and Burden on Existing Water Supply

[10 V.S.A. §§ 6086(a)(2) & (3)]

23. The Project does not require water to function and so will not use any significant amounts of water and will not place a burden on any existing water supply. Denis pf. at 6.

Soil Erosion

[10 V.S.A. § 6086(a)(4)]

24. The Project involves the disturbance of soils within the Mallets Bay and Iroquois Substations to install the improved oil containment facilities [Denis pf. 5/3/04 at 4-6], and outside the Iroquois Substation to underground the exit feeds a distance of 153 feet to a roadside riser pole [Denis pf. 5/3/04 at 5, lines 14-16; Denis sup. pf. 6/15/04 at 3; and GMP Exhibit DD-7]. GMP states that "Any contractor working for GMP must adhere to the *Vermont Handbook for Erosion Prevention and Sedimentation Control* and the best practices for the type [of] work being performed." Denis sup. pf. 6/15/04 at 2, lines 21-23. The substations are located on relatively flat terrain. Denis sup. pf. at 2, lines 17-18; GMP Exhibits DD-1 through 8. Accordingly, the Project will not result in unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result.

Transportation Systems

[10 V.S.A. § 6086(a)(5)]

25. Because the Project involves changes of facilities within the existing substations, the Project will not cause unreasonable congestion or unsafe conditions with respect to the use of highways, waterways, railways, airports and airways and other means of transportation existing or proposed. Denis pf. at 1-2 and 6.

Educational Services

[10 V.S.A. § 6086(a)(6)]

26. The Project will not cause any burden on the ability of any municipality to provide educational services. Denis pf. at 1, 2 and 6.

Municipal Services

[10 V.S.A. § 6086(a)(7)]

27. The Project will not place any burden on the ability of the local governments to provide municipal or governmental services. Denis pf. at 6.

**Aesthetics, Historic Sites
and Rare and Irreplaceable Natural Areas**

[10 V.S.A. § 6086(a)(8)]

28. Because it will involve only equipment changes and improvements within the existing Mallets Bay and Iroquois Substations and will not increase the footprint or height profiles of the substations, the Project will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas. This finding is supported by the applicable specific findings below and above.

Discussion

Based on the above findings, the Board finds that the proposed Project will not have an undue adverse effect on the aesthetics or scenic and natural beauty of the area. In reaching this conclusion, the Board has relied on the Environmental Board's methodology for determination of "undue" adverse effects on aesthetics and scenic and natural beauty as outlined in the so-called Quechee Lakes decision. Quechee Lakes Corporation, #3W0411-EB and 3W0439-EB, dated January 13, 1986.

As required by this decision, it is first appropriate to determine if the impact of the Project will be adverse. The Project would have an adverse impact on the aesthetics of the area if its design is out of context or not in harmony with the area in which it is located. If it is found that the impact would be adverse, it is then necessary to determine that such an impact would be "undue." Such a finding would be required if the Project violates a clear written community standard intended to preserve the aesthetics or scenic beauty of the area, if it would offend the sensibilities of the average person, or if generally available mitigating steps would not be taken to improve the harmony of the Project with its surroundings. The Board's assessment of whether a

particular project will have an "undue" adverse effect based on these standards should be significantly informed by the overall societal benefits of the project.¹

The proposed Project will not have an adverse effect on the aesthetics of the area. The Project involves the replacement of existing transformers with transformers of similar physical size within existing substations. Other equipment improvements such as installation of three new voltage regulators and replacement of distribution circuit breakers would also be within the existing substations, and will not increase the height profile of the substations. The footprint of the existing substations will not be changed. The only construction work to be performed outside of the substations is the undergrounding of the exit feeders from the Iroquois Substation to a roadside riser pole, and this will be performed by open-trench construction, with the trench backfilled with the soil that was removed. In summary, the visual appearance of the substations after the Project is constructed should not be different from the appearance prior to construction.

Even if the Project did have an adverse aesthetic impact, such impact would not be undue. The Project does not violate a clear, written community standard, is not shocking or offensive, and this Project would not require mitigation because the visual appearance of the substations should not change. The Town of Colchester Planning and Zoning Department and the Chittenden County Regional Planning Commission were notified of the proposed Project and did not recommend any changes to the proposal. Since all construction takes place within or adjacent to existing substations, its presence will not be shocking, and will not offend the sensibilities of the average person. As mentioned above, mitigation would not be required for this Project since the appearance of the substations will not change.

Necessary Wildlife Habitat and Endangered Species

[10 V.S.A. § 6086(a)(8)(A)]

29. Because of its location at the existing Substations, the Project will not significantly destroy or significantly imperil necessary wildlife habitat or any endangered species. Denis pf. at 6.

1. Docket 6884, Order of 4/21/04 at 20-21.

Development Affecting Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

30. The proposed modifications are not adjacent to and will not impact any public areas or investments. Denis pf. at 1-6.

Least-Cost Integrated Resource Plan

[30 V.S.A. § 248(b)(6)]

31. Based on findings 2-10 above, the Project is consistent with the principles for resource selection expressed in GMP's approved least-cost Integrated Resource Plan.

Compliance with Electric Energy Plan

[30 V.S.A. § 248(b)(7)]

32. The Project is consistent with the Vermont Twenty-Year Electric Plan. On May 6, 2004, the Department issued a letter to that effect in accordance with 30 V.S.A. § 202(f).

Outstanding Resource Waters

[30 V.S.A. § 248(b)(8)]

33. The Project is not located on any segment of water that has been designated an outstanding resource waters by the Water Resources Board. Denis pf. at 6 and finding 16.

Existing or Planned Transmission Facilities

[30 V.S.A. § 248(b)(10)]

34. The criterion relating to whether the Project can be served economically by existing or planned transmission facilities without undue adverse effect on Vermont utilities or customers is inapplicable because the Project involves upgrades to subtransmission/distribution facilities and is not an end use customer. Findings 2-6, above.

III. CONCLUSION

Based upon all of the above evidence, we conclude that the proposed construction will be of limited size and scope; the petition does not raise a significant issue with respect to the substantive criteria of 30 V.S.A. § 248; the public interest is satisfied by the procedures authorized by 30 V.S.A. § 248(j); and the proposed Project will promote the general good of the state.

IV. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that the proposed modifications, in accordance with the evidence and plans presented in this proceeding, will promote the general good of the State of Vermont in accordance with 30 V.S.A. Section 248, and a certificate of public good shall be issued in the matter.

Dated at Montpelier, Vermont this 28th day of June, 2004.

<u>s/Michael H. Dworkin</u>)	
)	PUBLIC SERVICE
)	
<u>s/David C. Coen</u>)	BOARD
)	
)	OF VERMONT
<u>s/John D. Burke</u>)	

OFFICE OF THE CLERK

FILED: June 28, 2004

ATTEST: s/Susan M. Hudson
Clerk of the Board

Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.